

## PATENT COOPERATION TREATY

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Attorney Docket No.: 101159-1P US

**PCT**

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

CODE	DATE	NTD
ANKOM 06 OCT 2004 GIPS		
DATA ENTERED		
FINAL see Form PCT/ISA/220 as well as, where applicable, Item 5 below		

Applicant's or agent's file reference <b>101159-1 WO</b>	<b>FOR FURTHER ACTION</b>	
International application No. <b>PCT/GB2004/003345</b>	International filing date (day/month/year) <b>04/08/2004</b>	(Earliest) Priority Date (day/month/year) <b>07/08/2003</b>
Applicant <b>ASTRAZENECA AB</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**HTEROCYCLIC AMIDE DERIVATIVES WHICH POSSESS GLYCOGEN PHOSPHORYLASE INHIBITORY ACTIVITY**

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

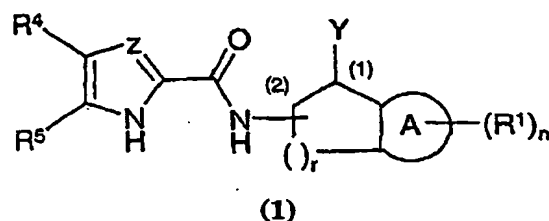
## INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB2004/003345

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A compound of the formula (1) or a pharmaceutically-acceptable salt, or pro-drug thereof;



wherein, for example,

Z is CH or nitrogen;

R<sup>4</sup> and R<sup>5</sup> together are either -S-C(R<sup>6</sup>)=C(R<sup>7</sup>)- or -C(R<sup>7</sup>)=C(R<sup>6</sup>)-S-;

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen, halo, nitro, cyano, hydroxy, fluoromethyl, difluoromethyl, trifluoromethyl, trifluoromethoxy, carboxy and carbamoyl;

A is phenylene or heteroarylene;

n is 0, 1 or 2;

r is 1 or 2;

R<sup>1</sup> is halo, cyano or carboxy;

Y is selected from -C(O)R<sup>2</sup>, -C(O)OR<sup>2</sup>, -C(O)NR<sup>2</sup>R<sup>3</sup>, -(1-4C)alkyl [optionally substituted] -(2-4C)alkenyl, -SO<sub>2</sub>NR<sup>2</sup>R<sup>3</sup>, and -S(O)<sub>c</sub>R<sup>2</sup> (wherein c is 0, 1 or 2);

R<sup>2</sup> and R<sup>3</sup> are independently selected from hydrogen, -O(1-4C)alkyl, -S(1-4C)alkyl, -N(1-4C)alkyl, heterocyclyl, aryl, and (1-4C)alkyl [optionally substituted];

possess glycogen phosphorylase inhibitory activity and accordingly have value in the treatment of disease states associated with increased glycogen phosphorylase activity.

Processes for the manufacture of compounds and pharmaceutical compositions containing them are described.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/003345

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/407 C07D495/04 A61P3/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BEILSTEIN Data, CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 02/20530 A (FREEMAN SUE ; KENNY PETER (GB); MORLEY ANDREW (GB); WHITTAMORE PAUL (G) 14 March 2002 (2002-03-14) page 36, line 25 - page 39, line 30; examples 112,133-140,142,148-154	1-16
Y	EP 1 136 071 A (PFIZER PROD INC) 26 September 2001 (2001-09-26) the whole document	1-16
P,A	WO 03/074531 A (WHITTAMORE PAUL ROBERT OWEN ; SIMPSON IAIN (GB); ASTRAZENECA UK LTD (G) 12 September 2003 (2003-09-12)	1-16

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

24 September 2004

Date of mailing of the international search report

06/10/2004

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/003345

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0220530	A	14-03-2002	AT 263772 T	15-04-2004
			AU 8283301 A	22-03-2002
			BG 107624 A	30-01-2004
			BR 0113606 A	24-06-2003
			CA 2417594 A1	14-03-2002
			CN 1473163 T	04-02-2004
			CZ 20030616 A3	14-05-2003
			DE 60102710 D1	13-05-2004
			DK 1317459 T3	12-07-2004
			EP 1317459 A1	11-06-2003
			HU 0400784 A2	28-07-2004
			JP 2004508376 T	18-03-2004
			NO 20031024 A	05-03-2003
			NZ 524011 A	27-08-2004
			WO 0220530 A1	14-03-2002
			SI 1317459 T1	31-08-2004
			SK 2592003 A3	05-08-2003
			US 2003232875 A1	18-12-2003
EP 1136071	A	26-09-2001	AU 2813001 A	27-09-2001
			CA 2341344 A1	22-09-2001
			EP 1136071 A2	26-09-2001
			HU 0101158 A2	28-02-2002
			JP 2001302546 A	31-10-2001
			NZ 510677 A	25-10-2002
			US 2003004162 A1	02-01-2003
WO 03074531	A	12-09-2003	ZA 200102318 A	20-09-2002
			WO 03074531 A1	12-09-2003